SEQUENCE LISTING

<110> ROMOND, Pierre-Charles

<110> RENAUD, Michel

<110> ALRIC, Monique

<110> MEINIEL, Olivier

<110> BALLUT, Lionel

<120> METHOD FOR DETECTING MICRO-ORGANISMS

<130> 344 292 - US

<150> PCT/FR 01/02 371
<151> 2001-07-20

<150> FR 00/09 600
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<170> PatentIn Ver. 2.1

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<211> 26
<212> DNA
<213> Artificial sequence
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<220>
<223> Description of artificial sequence: Consensus
      Primer (UNI-ADEG 1)

<220>
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<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
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<222> (15)
<223> n = a, g, c or t

<220>
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<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
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<222> (24)..(25)
<223> n = a, g, c or t

<400> 34
ggngayggna cnacnacngc nacnnt                              26


<210> 35
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus
      Primer (UNI-ADEG 2)

<220>
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<222> (3)
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<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t
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```
<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
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<222> (18)
<223> n = a, g, c or t

<220>
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<223> n = a, g, c or t

<220>
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<222> (24)..(25)
<223> n = a, g, c or t

<400> 35
ggngayggna cnacnacntg ntcnnt                                    26


<210> 36
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting enterobacteria (ENT-BNEW).

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t


<400> 36
aanmttcgtc cnytrcanga ycgngt                                    26
```

<210> 37
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting clostridia (CLO-BNEW2)

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
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<222> (21)
<223> n = a, g, c or t

<400> 37
atnarrccay twggwgaymg ngtwgt   26

<210> 38
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting bifidobacteria (BIF-BNEW).

<220>
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<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<400> 38
aarccrctcg aggacmrnrt nstsgt   26

<210> 39
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Lactococcus (UNI-A3).

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>

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<221> misc_feature
<222> (9)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (12)
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<220>
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<222> (15)
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<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (24)..(25)
<223> n = a, g, c or t


<400> 39
ggngayggna cnaanacngc nacnnt                                    26


<210> 40
<211> 26
<212> DNA
<213> Artificial sequence


<220>
<223> Description of artificial sequence:  Consensus sequence
     for detecting Bifidobacterium and Mycobacterium (BIF-BNEW2).


<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t


<400> 40
atcaagccnc tmgrrgacmr srtnst                                   26


<210> 41
<211> 26
<212> DNA
<213> Artificial sequence


<220>
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<223> Description of artificial sequence: Consensus sequence
      for detecting Helicobacter (HEL-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
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<222> (6)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
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<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 41
ntncanccnt tnggnganag ngtntt   26

<210> 42
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Campylobacter (CAM-BNEW).

<220>
<221> misc_feature

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<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 42
ntncanccnt tnggnaancg ngtnct                                          26


<210> 43
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting bacteroids (BACT-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
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<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 43
ntnaanccnt tngcngancg ngtnct                                          26

<210> 44
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Chlamydia (CHLA-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (6)
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<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 44
ntnaanccnt tnggnganag natntt                                        26


<210> 45
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Mycoplasma (MYCP-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)..(10)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
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<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 45
ntnaaaccnn tnggnaancg ngtnat                                  26


<210> 46
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Staphylococcus (STA-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)..(10)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
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<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 46
ntnaaaccnn tnggnaancg ngtnat                                    26


<210> 47
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Lactoccocus and Streptococcus (LACC-BNEW).

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (14)
<223> n = a, g, c or t

<400> 47
ttgaaaccnt tagngraycg ygtrst                                    26


<210> 48
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Lactobacillus and Bacillus (LACB-BNEW).

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t
```

```
<400> 48
ttamarccaw tmggngatcg ngtnrt                                              26
```

```
<210> 49
<211> 26
<212> DNA
<213> Artificial sequence
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<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Clostridium (CLO-BNEW3).
```

```
<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t
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<220>
<221> misc_feature
<222> (5)
<223> n = a, g, c or t
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```
<220>
<221> misc_feature
<222> (10)
<223> n = a, g, c or t
```

```
<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t
```

```
<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t
```

```
<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t
```

```
<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t
```

```
<400> 49
atnanaccan tnggngacag ngtngt                                             26
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```
<210> 50
<211> 26
<212> DNA
<213> Artificial sequence
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<220>
<223> Description of artificial sequence:  Consensus sequence
      for detecting Enterobacteriaceae, Pasteurella, Haemophilus
      (ENT-BNEW2).
```

```
<220>
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<221> misc_feature
<222> (1)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t


<220>
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<222> (15)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t


<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 50
ntncgnccnt tncangancg ngtnat                                          26



<210> 51
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
     for detecting Neisseria, Legionella (LEG-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
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<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 51
ntncgnccnt tncangancg ngtngt                                    26


<210> 52
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Aeromonas and Bordetella (AER-BNEW).

<220>
<221> misc_feature
<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
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<221> misc_feature
<222> (6)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (15)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 52
ntncgnccnc tncangancg ngtnat                                              26


<210> 53
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
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<222> (9)..(10)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
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<222> (12)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 53
ggnggncann snttyggnga ratgga   26

<210> 54
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 54
aaygcngayt tygayggnga ysarat   26

<210> 55
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 55

ggnggncarm gnttyggnga ratgga   26

<210> 56
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 56
ggnggncayg gnttyggnga ratgga   26

<210> 57
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

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<400> 57
ggnggncarw snttyggnga ratgga                                    26


<210> 58
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (6)..(7)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 58
ggnggnntnm gnttyggnga ratgga                                    26


<210> 59
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 59
aaygcngayt tygayggnga ycarat                                    26
```

```
<210> 60
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 60
aaygcngayt tygayggnca ratggc                                           26


<210> 61
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (6)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u

<400> 61
aaygcngayt tygayggnga ygarat                                           26


<210> 62
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Primer

<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t/u

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t/u

<400> 62
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atytsrtcnc crtcraartc ngcrtt                                        26

<210> 63
<211> 333
<212> DNA
<213> Lactobacillus reuteri

<400> 63
cttgttaagg aattacaagc attaggtctt gatatgaagg ttcttgatgg taacaacaag    60
gaaattcagt taaagaacat ggacgaagat gatgatgaag ttgtaaatgt tgatgcatta   120
gctaaatatg cagaagaaca taaaacagac gataagaaga acgaagaaga aaacaagtct   180
gaagcaactt caacaactac cgatgacaaa actaatcaaa attaatattt aggttgctac   240
ggtttactga aagaaggagg aacatccttt gattgatgtc aataaatttg aaagtatgca   300
gatcggtctg gcatctccag ataagatccg tag                                333


<210> 64
<211> 338
<212> DNA
<213> Bacillus subtilis

<400> 64
cttgttaagg aacttcaatc attaggtttg gatattcgtg ttcttgatat gaatcataat    60
gaaattgaac ttcgtgatat ggatgaagat tcaagtgaac acttaaacat tgattcattg   120
tcacgtatgg cagaagaaca agaaaagaag aagttagccg aagaaactgg aaaatcagaa   180
gataagaaag aaaacaagaa agatgcagat aagctagtag ctcctgcaga tgaatctgac   240
gacgaagttt ctaaatagta ggaggttaaa cttttgatcg acgtaaataa atttgaaagt   300
atgcaaattg gtcttgcatc acctaacaag atcagaag                           338


<210> 65
<211> 329
<212> DNA
<213> Lactobacillus gaseri

<400> 65
cttgttaagg aacttcaatc cttaggtttg gatattaaag tcttagatat ggaccacaag    60
gaaattgaat tacgtgacat ggatgatgat tctaatgatc acttcaacat tgacacttta   120
tctaagcttg ctgaacaaca agaaaagaag aagttagccg aagaagctgc aaagaaagat   180
gataagtcag ccgaacctgt agatcagagt gattcttcaa cttcatctga tgataaggtt   240
tctaagtaat aggaggttaa acttttgatc gacgtaaata agtttgaaag tatgcaaatt   300
ggtttggctt ctccaaacaa gatcagaag                                     329


<210> 66
<211> 296
<212> DNA
<213> Lactobacillus paracasei

<400> 66
cttgtcaaag aattgcaagc actgggtctg gatatgaagg tccttggcgc ggataaaaaa    60
gaaattgaac tgcgggacat ggacgacgac gaggatgata ttgtttctgt cgatgccttg   120
gcgaagtttg ctgctcagca ggaagaaaag aaggctcacg aagccgcagc acaagcaact   180
gacggtaagt ctgccaacag taccgacgat aagaaatagg aggttagccc tttgattgat   240
gtcaataagt ttgaaagtat gcaaatcggc ttagcctcgc cagataaaat ccgtag       296


<210> 67
<211> 386
<212> DNA
<213> Lactococcus lactis

<400> 67
```

```
ttggttaaag agttacaatc acttggtctt gatatgaaag tccttgatgc tgaccgtaat          60
gttcttgact tacgtgaatt ggatgaagat gaagtaatga ctcgtccaga taatacagaa         120
attactcctg aaatgcttga agcacaggaa gctattgttg cacaagcaga agctgaagaa         180
gaagctttga ttaacgctga tactgaaaaa taagattttg taattaatat tttgagatag         240
atttactgac aaaaatttct gtcagtaaat ctctaatctc ataatcgtct agcgttaaat         300
ttattagaag tggagaaaga attggttgat gtaaataaat ttgagagtat gcgtattggt         360
atcgcatctc cacaaaaaat tcgtta                                              386
```

<210> 68
<211> 344
<212> DNA
<213> Streptococcus pyogenes

<400> 68
```
cttgtaaaag aattgcaatc gcttggtctt gatatgcgtg tgcttgacga ggatgataat          60
gaagtggaac ttcgtgatct tgatgaaggt gaagacgatg acattatgca tgttgacgat         120
ctcgagaagg cacgtgaaaa acaagctcaa gaaactcaag aagtttctga aacaactgac         180
gaaaaataag caatcaattc ttattaaata attatttact ggtctggggc aaaggcccca         240
ggaactggta aagtcatcaa aggcagaaag gtaaaactag tggttgacgt aaatcgtttt         300
aaaagtatgc aaatcacatt agcctcacca agtaaggtcc gttc                         344
```

<210> 69
<211> 318
<212> DNA
<213> Lactobacillus helveticus

<400> 69
```
ttaatcaaag aacttcaaag cttaggtatg gatgtcaaaa tcctttctgg tgatgaagaa          60
gaaatagaaa tgagagattt agaagacgaa gaagatgcga aacaagctga cggcctggca         120
ttatcaggtg atgaagagcc ggaagaaaca gcatctgcag acgttgaacg cgatgtagta         180
acaaaagaat aatctctagt tataaaggca agtgacatcg gttaatccga agataaaaag         240
ggaggtaggc cccttgctag atgtgaacaa ttttgagtat atgaacatcg gtcttgcttc         300
accagataaa atccgttc                                                        318
```

<210> 70
<211> 318
<212> DNA
<213> Bacillus subtilis

<400> 70
```
ttaatcaaag aacttcaaag cttaggtatg gatgtcaaaa tcctttctgg tgatgaagaa          60
gaaatagaaa tgagagattt agaagacgaa gaagatgcga aacaagctga cggcctggca         120
ttatcaggtg atgaagagcc ggaagaaaca gcatctgcag acgttgaacg cgatgtagta         180
acaaaagaat aatctctagt tataaaggca agtgacatcg gttaatccga agataaaaag         240
ggaggtaggc cccttgctag atgtgaacaa ttttgagtat atgaacatcg gtcttgcttc         300
accagataaa atccgttc                                                        318
```

<210> 71
<211> 304
<212> DNA
<213> Bacillus halodurans

<400> 71
```
cttataaaag agctacagtc tctcggtatg gacgtcaaga tgctatcaag tactgaggaa          60
gagattgaaa tgaaagagct tgatgatgag gatgaacaag caagcgacaa attgaacttg         120
aatattgatt caacagaatc aaatgtttaa tcagctgaaa ggggagcagt cccctttcac         180
ttgctcttta aattcgttac ctgcttttgg acatggaaat cataagggag gttggcccct         240
tgatagacgt aaacaatttt gagtacatga aaattggtct tgcttcacca aataaaattc         300
gttc                                                                       304
```

<210> 72
<211> 363
<212> DNA
<213> Staphylococcus aureus

<400> 72
```
ttgatgaaag aattacaaag tttaggttta gatgtaaaag ttatggatga gcaagataat      60
gaaatcgaaa tgacagacgt tgatgacgat gatgttgtag aacgcaaagt agatttacaa     120
caaaatgatg ctcctgaaac acaaaaagaa gttactgatt aatacgcaat ttacaaaaca     180
ggcaaaaaga tactaagctg aattttattg atgattcagt ttagtacttt aagccatttt     240
aaataaatgc aaatcaatca aatagcacag ctaatctaaa ttgaaggagg taggctcctt     300
gattgatgta aataatttcc attatatgaa aataggattg gcttcacctg aaaaaatccg     360
ttc                                                                    363
```

<210> 73
<211> 352
<212> DNA
<213> Clostridium spiroforme

<400> 73
```
ttaaagaaag agttacaagc acttgcattg gatgtacgtt tgttagatga aaatgataat      60
gaagttgata tgcgtaatat tgaagaagag gaacatcgtt tcccgcgtag cattgataaa     120
gatgaagtaa ttgaaactcc aaaaactgat gatgaagttt ccgaagaaat tactgaagat     180
gatttaaatg tagaagaatg tgacgtatgt gaagaagata actttgagga caatgacttc     240
gaagacaatg atattgaaga aagtgaatca ttataggagg aattacgatg gcaaatacaa     300
ataaattctc agcgattcaa attggtttag cttcgcttca gaagattcgc ga             352
```

<210> 74
<211> 358
<212> DNA
<213> Clostridium leptum

<400> 74
```
ctcattaagg agcttcagtc cctgggcctg gatgtaaagg tgctggataa ggatgagcag      60
gagatcgacc taaagcagaa ctttgacgac gatgacgata tcggcttgaa cgacggcggc     120
accattctgg aggaggatga agtcatgacc tccatggatg gctacaccct ggaggacgat     180
ccggacgata acaacatgtt tgacgattcc ggcttttttg acgaagacgg agacgatctt     240
ttggattttg attccattgc aagtgatatt cgtgaagaat aaggaggggc gataggatgg     300
agtttaacgt ttttgagtca attaaaatcg gactggcctc tccggataaa attcgaga       358
```

<210> 75
<211> 376
<212> DNA
<213> Clostridium nexile

<400> 75
```
ctcctgaaag aacttcagtc actgggactt gacgtgagag tattgcgtga agatcagaca      60
gaagttgaga ttatggagac aatcgattac ggtgaaacag atttacattc aattattgaa     120
ggagacagaa gatacaattc tgagaatgaa tcttatggag aacatggttt cagtcagcag     180
gaatttgcag gcgaggaact tgtggatgta gaggaagatg aatttgatga accggatgat     240
atcgattttg acgatatgtt agacgaagaa taggaggatt gccaataatg ccagtaacaa     300
ataatgaacc agcataccag ccgatgactt ttgatgcgat caaaatcggt ttggcgtcac     360
ctgaaaaaat cttgga                                                     376
```

<210> 76
<211> 391
<212> DNA

<213> Ruminococcus hydrogenotrophicus

<400> 76
```
ctcttaaaag aacttcagtc cctgggtctg gacgtgagag tcctcaacga agaccagacc      60
gaggtggaga tcatggagag cgtggattac ggtgatacag atctgcactc catcattgag     120
ggagatcgtc atcgttcgca ggatgagtcc tacggagcaa tgggatatac gaagcaggaa     180
ttttccggtg aagagctggt agacatcgac gagagtgaag acgacagcga agacgaagat     240
gaagatttga ttgaattgga agattctctt gacagagaag agtagaaagg ggtaagaaac     300
aaatggcaga aatgaacaac aatgaaacct atcagccaat gactttcgat gccatcaaaa     360
tcggactggc gtcccctgag aaaatcagag a                                    391
```

<210> 77
<211> 182
<212> DNA
<213> Chlamydia muridarum

<400> 77
```
ttgattaaag aaatgcaagg tctagggctc gatgttcgcc ctatggtagt agatgcttaa      60
aaaacacttg ttggagataa gttaatgttc aaagaaggtt ctcgagacga tgcagcccta     120
gcaaaagaag ggttgtttga taagttagaa attgggattg cttcagatgt gactattcgc     180
ga                                                                    182
```

<210> 78
<211> 182
<212> DNA
<213> Chlamydia trachomatis

<400> 78
```
ttgattaaag aaatgcaagg tctagggctt gatgttcgcc ctatggtagt agatgcttaa      60
aaaacacttg ttggagagaa gttaatgttc agagaaggtt ctcgagacga tgcagccctg     120
gtaaaagaag ggctgtttga taagttagaa attgggattg cttcagatgt gactattcgc     180
ga                                                                    182
```

<210> 79
<211> 181
<212> DNA
<213> Chlamydophila pneumoniae

<400> 79
```
ctaattaaag agatgcaggg tctaggactt gatgttcgtc ctatggtcgt agacgcttaa      60
aaaatgacgt tttggagaaa ataatgttcg agaaaattc tcgagacatt ggagttcttt      120
ctaaagaagg actatttgat aaattagaga taggcatagc ttcagatatt acaattcgtg     180
a                                                                     181
```

<210> 80
<211> 181
<212> DNA
<213> Chlamydophila pneumoniae

<400> 80
```
ctaattaaag agatgcaggg tctaggactt gatgttcgtc ctatggtcgt agacgcttaa      60
aaaatgacgt tttggagaaa ataatgttcg agaaaattc tcgagacatt ggagttcttt      120
ctaaagaagg actatttgat aaattagaga taggcatagc ttcagatatt acaattcgtg     180
a                                                                     181
```

<210> 81
<211> 181
<212> DNA

<213> Chlamydophila pneumoniae

<400> 81
ctaattaaag agatgcaggg tctaggactt gatgttcgtc ctatggtcgt agacgcttaa   60
aaaatgacgt tttggagaaa ataatgttcg gagaaaattc tcgagacatt ggagttcttt   120
ctaaagaagg actatttgat aaattagaga taggcatagc ttcagatatt acaattcgtg   180
a   181

<210> 82
<211> 225
<212> DNA
<213> Klebsiella pneumoniae

<400> 82
ttgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg   60
ctcaaacagg tcactgctgt cgggttaaaa cccggcagcg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc   225

<210> 83
<211> 225
<212> DNA
<213> Escherichia coli

<400> 83
ttgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg   60
ctcaaacagg tcactgctgt cgggttaaaa cccggcagcg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc   225

<210> 84
<211> 225
<212> DNA
<213> Escherichia coli

<400> 84
ttgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg   60
ctcaaacagg tcactgctgt cggggtaaaa cccggcagcg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc   225

<210> 85
<211> 225
<212> DNA
<213> Escherichia coli

<400> 85
ttgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg   60
ctcaaacagg tcactgctgt cggggtaaaa cccggcagcg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc   225

<210> 86
<211> 225
<212> DNA
<213> Escherichia coli

<400> 86

```
ttgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg    60
ctcaaacagg tcactgctgt cggggtaaaa cccggcagcg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc                   225
```

<210> 87
<211> 225
<212> DNA
<213> Salmonella typhimurium

<400> 87
```
ctgttgaaag agatccgctc gctgggcatc aacatcgaac tggaagacga gtaattctcg    60
ctcaaacagg tcactggtgt cggggtaaaa cccgacacca gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc                   225
```

<210> 88
<211> 225
<212> DNA
<213> Enterobacter cloacae

<400> 88
```
ctgttgaaag agattcgttc gctgggtatc aacatcgaac tggaagacga gtaattctcg    60
ctcaaacagg tcactggtgc cgggttaacc cccggcaccg gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcttcgcc agacatgatc cgttc                   225
```

<210> 89
<211> 225
<212> DNA
<213> Citrobacter freundii

<400> 89
```
ctgttgaaag agattcgttc gctgggtatc aacatcgagc tggaagacga gtaactctcg    60
atcaaacagg tcactggtgc tggcgtaata gccagcgcca gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt   180
tgatgcgatc aaaattgcgc tggcctcgcc agacatgatc cgttc                   225
```

<210> 90
<211> 225
<212> DNA
<213> Klebsiella oxytoca

<400> 90
```
ttgttgaaag agattcgctc gctgggcatc aacatcgaac tggaagacga gtaactctcg    60
ctcaaacagg tcactggtgc cggggtaaga cccggcgcca gattgtgcta actccgacgg   120
gagcaaatcc gtgaaagact tattaaagtt tctgaaagcg caaactaaaa ccgaagagtt   180
tgatgcgatc aaaattgctc tggcatcgcc agacatgatc cgttc                   225
```

<210> 91
<211> 267
<212> DNA
<213> Serratia liquefaciens

<400> 91
```
ctgttgaaag aaatccgctc gctcggtatc aacatcgaac tggaagacga gtaatcgttt    60
ttccagctca ggctcccggc cttagggagc ctgagggtgg ttgttcaggt cacacgggtg   120
cgcgatttgt cagcgtgcac ccaacaggtt taactccgac aggagccaat ccgtgaaaga   180
```

```
cttattgaag tttctgaaag cgcaaactaa gaccgaagag tttgatgcga tcaagattgc      240
tctggcatcg ccagacatga tccgttc                                          267
```

```
<210> 92
<211> 267
<212> DNA
<213> Serratia marcescens
```

```
<400> 92
ctgttgaaag aaatccgctc gctcggcatc aacatcgaac tggaagacga gtaatcgtca       60
tgccggctca ggctccccgc ctaagggagc ctgagggtgg ttgttcaggt cacacgggta      120
cctactgcgg ttgtgggtac ccaacaggtt taactccgac aggagccaat ccgtgaaaga      180
cttattgaag tttctgaaag cgcaaactaa gaccgaagag tttgatgcga tcaagattgc      240
tctggcctcg ccagacatga tccgttc                                          267
```

```
<210> 93
<211> 257
<212> DNA
<213> Morganella morganii
```

```
<400> 93
ttgctgaaag aaatccgttc cctcggtatc aatatcgagc tggaagacga gtaattaccg       60
ttgtggctgc ccgtggtaca cgggcagcac cagtaaatct ggtttaaggg acaaacagac      120
gaccgtttgt ctcacaggtc taactccgac aggagccatt tcgtgaaaga cttattaaag      180
tttctgaaag cgcaaaccaa gaccgaagag tttgatgcga tcaaaattgg tctggcctca      240
cctgacatga ttcgttc                                                     257
```

```
<210> 94
<211> 271
<212> DNA
<213> Proteus mirabilis
```

```
<400> 94
ttgttgaaag agatccgttc actgggtatc aacatcgaat tggaagacga ataacgtatt       60
ccatgaaagc agactgctaa atatggcagt ctgctaaaca gtgactacac tggtttaaag      120
gggtgaatga caggggtcat ttgcctggca ggtctaactc cgacaggagc catttcgtga      180
aagacttatt aaagtttctg aaagcgcaaa ccaagaccga agagtttgat gcgatcaaaa      240
ttgctctggc atcacctgat atgatccgtt c                                     271
```

```
<210> 95
<211> 253
<212> DNA
<213> VIBRIO CHOLERAE
```

```
<400> 95
ctgttgaaag agattcgctc gctgggtatc aacatcgagc tagaagacga ataataaacc       60
ctaaggtttc cccgcaaggg gaagcctacc ggtttcggta ggaaggtgct cgttgccaat      120
cgcagcgagt tccttttaac tccttacagg agctgaatgt gaaagactta ttaaactttc      180
taaaagcaca gcataagacc gaagaatttg atgcgatcaa aatcggtctg gcttcaccag      240
acatgatccg ttc                                                         253
```

```
<210> 96
<211> 214
<212> DNA
<213> Pseudomonas aeruginosa
```

```
<400> 96
ctgatcaaag agatccgttc gctcggcatc gacatcgaac tggaaaccga ataacacgtg       60
```

```
acgctagacg gtgcggctgg tcaaggccgg tcgcaccggg tccgtgagga ggaaaggcct    120
tgaaagactt gcttaatctg ttgaaaaacc agggtcaaat cgaagagttc gatgccatcc    180
gtattggcct ggcttcgccc gagatgattc gttc                                214
```


```
<210> 97
<211> 214
<212> DNA
<213> Pseudomonas aeruginosa
```

```
<400> 97
ctgatcaaag agatccgttc gctcggcatc gacatcgaac tggaaaccga ataacacgtg     60
acgctagacg gtgcggctgg tcaaggccgg tcgcaccggg tccgtgagga ggaaaggcct    120
tgaaagactt gcttaatctg ttgaaaaacc agggtcaaat cgaagagttc gatgccatcc    180
gtattggcct ggcttcgccc gagatgattc gttc                                214
```


```
<210> 98
<211> 212
<212> DNA
<213> Pseudomonas putida
```

```
<400> 98
ttgatcaaag agatccgttc gctcggtatc gatatcgatc tggaaaccga ataacacgtg     60
acgcgaaggg gagtggggca ggtaatgctg ctccctgctc cgccaggagg aaaggccttg    120
aaagacctac tgattttgct gaaaaaccag ggtcaagtcg aagagttcga cgccatccgc    180
atcggtctgg cgtcgcctga aatgatccgt tc                                  212
```


```
<210> 99
<211> 228
<212> DNA
<213> Shewanella violacea
```

```
<400> 99
ttgttgaagg aaatccgttc actcggtatt aatatcgagt tggatcaaga ctaaaattaa     60
cttaggttaa tttggcaata aattggtgtc ctgcattagc ggggcacccg gtttactcct    120
tcaggagaga aacgtgaaag acttattaaa gtttctgaaa cagcaaagca agaccgaaga    180
atttaacggt atcaagatcg gactagcgtc accagatctg atccgctc                 228
```


```
<210> 100
<211> 393
<212> DNA
<213> Haemophilus influenzae
```

```
<400> 100
attatgaaag aaatccgctc acttggttta aatatcgagt tagacgaaga gtaatcactg     60
attactataa atggtgctga tcccttggct ccaccgtttt acggggagc tggcgcgaag    120
actgaggggg gatttatatc ctaagccccc ttccgccctt cgggcacctt ccctcgcaaa    180
gcaggggaag gcaagaggaa caacaacata agatttgaaa tcgccgaagt gcggtcaaaa    240
ttctccgaaa tttttaaccg cactttaaac ctttaactcc gacaggagaa catttgtgaa    300
agacttagtt aagttttaa aagcacaatc aaaaaccagt gaagattttg atgtgattaa    360
aattgggtta gcttccccag atatgatccg ttc                                 393
```


```
<210> 101
<211> 262
<212> DNA
<213> Pasteurella multocida
```

```
<400> 101
```

```
attatgaaag aaattcgctc gcttggtatc aatattgatt tagatgaaga ttaatctgac      60
atcataacca agcttggtgt aaagcaatgt acgcgcaagt gcggtaaaaa tttttaaaat     120
ttcagccgca cttgaataag tttaactccg acaggagcaa atctgtgaaa gacttagtta     180
agtttttaaa agcacaatca aaaacaagtg aagattttga tgtgatcaaa attggtttag     240
cctcaccgga catgatccgt tc                                             262
```

<210> 102
<211> 306
<212> DNA
<213> Neisseria meningitidis

<400> 102
```
ttggtcaaag agattcgctc actgggcttg gatatcgatt tggaacgcta ctgatacggg      60
tttcagacgg cataagggga gctgttctgc aggtatgcgg ggcagccgac aatgtttaaa     120
aacgaaatgc cgtctgaaaa cactgtacct ctatccatat cgaaaatccg ccatgcggta     180
aaaatacttc cttcaaggag caaaaatgaa tttgttgaac ttatttaatc cgttgcaaac     240
tgccggcatg gaagaagagt ttgatgccat caaaatcggt attgcctctc ccgaaaccat     300
ccgctc                                                              306
```

<210> 103
<211> 311
<212> DNA
<213> Neisseria meningitidis

<400> 103
```
ttggtcaaag agattcgctc actgggcttg gatatcgatt tggaacgtta ctaaacaaaa      60
gttttcagac ggcctttcag ggtcgtctga aaaagtggtt tcagaataag aatgaagcaa     120
tcggcattta ggccgtctga aatcaaaagt accgtttccc aatatcgaaa atccgccatg     180
cggtaaaaat acttccttca aggagcaaaa atgaatttgt tgaacttatt taatccgttg     240
caaactgccg gcatggaaga agagtttgat gccattaaaa tcggtattgc ctctcccgaa     300
accatccgct c                                                        311
```

<210> 104
<211> 226
<212> DNA
<213> Buchnera sp

<400> 104
```
cttttaaaag aaattcggtc attagggatt aatattgaac tagaaagcga ataacaaaat      60
tagcaatatt ataaaaatat ttatgtatta tttatttacc ttaaaagttt tactccaacg     120
agagctaacg tgtgaaagat ttactaaaat ttctaaaatc ccaaactaaa aatgaagatt     180
ttgatgctat taaaatctcg ttagcttcac ctgatatgat cagatc                 226
```

<210> 105
<211> 247
<212> DNA
<213> Xylella fastidiosa

<400> 105
```
ctcgtgaaag aaatccgctc cttagcaatt aatattgagt tggaagataa ctaagatgcg      60
ttgttatgga ttaattcatc tgtttggagg cccagagctc cattgtcctc tgtttccaac     120
tcgtcccgat gcccgaattt cggagaagaa gtatgaaaga tctactcaat ctttttaatc     180
agcagcgcca gacattggat ttcgatgcca tcaagattgg ccttgcctcg cctgccttga     240
ttagatc                                                             247
```

<210> 106
<211> 265
<212> DNA
```

<213> Caulobacter crescentus

<400> 106
```
ctggtcaagg aaatgcgctc gctcggcctg aacgtcgagc tggagaacag ctgatctgga   60
tctccctcct cgcctgcccc tcttaggaag ggtggccggg gaggggcctc ctttcagccc   120
gctctccctc aagaattttc gcgggaaacc ccgcagaagg aaccaagatg aaccaggaag   180
tcctgaacat cttcaatccg gtccaggccg ctccgacctt cgaccagatc cgtatctcgc   240
tcgcctcgcc ggaaaagatc cgctc   265
```

<210> 107
<211> 325
<212> DNA
<213> Mezorhizobium loti

<400> 107
```
ctcgtcaagg aaatgcggtc tctcggcctc aatgtcgagc tggagaacac caagctcgac   60
gacgccctg tccggctgcc cgacgcggcc gagtaaaggc tacagcgcgc cgcacgaagt   120
tgcggcgcgc aaaggaattc gacggccggt ggccgacaaa agatggcggg cgtttggccc   180
gcgactagat gcaagggtt ttcgaggacc ccgaaaagga gaacggcatg aaccaagagg   240
tcatgaatct cttcaatccg caggcgcctg cgcaggtgtt cgattccatc cggatctcac   300
tggccagccc tgagaagatt ctgtc   325
```

<210> 108
<211> 311
<212> DNA
<213> Rickettsia prowasekii

<400> 108
```
atgataaaag aatttagatc tttatgtctc aacgtaaagc ttgaagtaac tccaagtaaa   60
taaagtgtat atatgttgta cataatttgt cttgttgtat aatttaaaaa ttgttattgc   120
aagccaaact aaatgaatgt agtgagccat aatgttattt tgtatttaag ctatggagta   180
acattttaga gtaggagtaa tttttaggga aaagtattta tgagcgtagt taattttat   240
ggacaattaa gtaatactca acaatttgac cagataagga ttaatatagc cagtcctgat   300
caggtacgtt c   311
```

<210> 109
<211> 188
<212> DNA
<213> Borrelia burgdorferi

<400> 109
```
ctaatgcaag agcttagagg gcttggactt gatttgtcaa tttatgatga tgctgggaat   60

caggttcctt tgacagaaaa agaagaagaa ttgattaata aaagctaggt ttttggagtt   120
tttatgaaag agataaaaga ttttgaaaga ataaaaatta aaatagcgtc tcccgatcaa   180
attagaaa   188
```

<210> 110
<211> 197
<212> DNA
<213> Treponema pallidum

<400> 110
```
ttggtgcagg agctgcgggg acttgcgctc gactttacga tttacgatgc gaagggcaag   60
cagattccgc tcactgagcg cgatgaagaa atgacgaata agattggctc taaattttaa   120
ggggtgcagg gaatgaagga tatccgggat tttgacagtt tacagataaa gcttgcctcc   180
cctgatacca ttcgggc   197
```

<210> 111
<211> 159
<212> DNA
<213> Campylobacter jejuni

<400> 111
ttaaccaatg agcttaaatc tcttgcttta gatgttgaga tttttgataa ggatgaagat    60
aatgagtaaa tttaaagtaa tagaaattaa agaagatgca agacctagag attttgaagc   120
atttcaacta agacttgcaa gtcctgaaaa aatcaaatc                          159


<210> 112
<211> 161
<212> DNA
<213> Helicobacter pylori

<400> 112
ttgactaaag aattgcaatc gctcgctttg gatattaata tttttggtga cgatgtggat    60
gaggatggag cacctaaacc cattgtcatt aaagaagatg acaggcctaa agactttagc   120
tctttccagc tcacactagc tagccctgaa aaaatccatt c                       161


<210> 113
<211> 161
<212> DNA
<213> Helicobacter pylori

<400> 113
ttgactaaag aattgcagtc gctcgctttg gatattaata tttttggtga cgatgtggat    60
gaagatggag cgcctagacc cattatgatc aaagaagatg acaggcctaa agactttagc   120
tctttccagc tcactctagc tagccctgaa aagatccatt c                       161


<210> 114
<211> 175
<212> DNA
<213> Aquifex aeolicus

<400> 114
ctcgtaagag agctaaaggc tcttgggcta aacgttaagt gtctgaatgg tgaagagaag    60
ccttgtgacg aggttgaagt taaagaggag gaagaaaaat gagtgaagca agaaggggta   120
tcttcccctt ctcaaaaatt aaattgatgc tcgcttctcc cgaggatatc agaag        175


<210> 115
<211> 175
<212> DNA
<213> Aquifex pyrophilus

<400> 115
ctcgttaggg agctcaaagg tctcagcctt aacgttaagt gtatgaacgg tgaggagaag    60
ccctgtgacc aagttgagat taaagaggag gaagaaaaat gagcacaaaa ggtaggggta   120
tctttccttt ctcaaaaatt aagcttatgc tcgcttctcc cgacgatatc agaag        175


<210> 116
<211> 293
<212> DNA
<213> Deinococcus radiodurans

<400> 116
ctggtcaagg aactccactc gctcggtctg gacgtcgagg tgctcgacca cggcgacaag    60

```
gccgtggaca tctttgaagg gatgatgccc aagcgctaag gcgcctgcgg cactgccaac    120
ccgtcgagca ctgtcaaacc gtctaaaggt caaaccgcca acatctttca gccgttcgac    180
ggtgagacag ttcgacggtt tgaccaacaa aagagcctcc attccacagg agcctgaatg    240
aaagacttca acaaagtccg catcgccatc gccagcccgg agaagatccg cga           293
```

<210> 117
<211> 177
<212> DNA
<213> Thermus aquaticus

<400> 117
```
ctggtgaagg agcttcaggc cctggccctg gacgtgcaga ccctggacga gaaggacaac     60
cccgtggaca tttttgaggg cctggcctcc aagaggtgag ccctttctg gaggaaagat    120
gaaaaaggaa gtccgcaagg tccgcatcgc cctggcctcc cccgagaaga tccgctc       177
```

<210> 118
<211> 174
<212> DNA
<213> Thermotoga maritima

<400> 118
```
ctcatcaaag aactcagagg tctcgcgctc gatgtgagac tctacgatga gaacggtaac     60
gagatagata tcgacaagta ctgattggga ggttggtaga atgccaatgt cctctttcaa    120
gaggaagata aaggcaattc agataaagat agcctctccg gaagtgataa gaag          174
```

<210> 119
<211> 324
<212> DNA
<213> Streptomyces coelicolor

<400> 119
```
ctcatcaagg agatgcagtc cctgtgcctc aacgtggagg tgctgtcctc ggacggcatg     60
tccatcgaga tgcgtgacac cgacgaggac gtcttccgcg cagcggagga gctcggcatc    120
gacctgtcgc ggcgcgagcc gagcagcgtc gaagaggtct gacgggagtc aggcggggcc    180
tgtcctccac aggccccgcc gatcccgcga ccccgtttc agaccacaga cttacaaccc     240
tgagagggat tgacgcatag tgctcgacgt caacttcttc gacgagctcc ggatcggtct    300
ggccaccgct gacgacatcc gtca                                           324
```

<210> 120
<211> 281
<212> DNA
<213> Mycobacterium leprae

<400> 120
```
ctgctcaagg agttacagtc gctgtgtctc aacgtcgagg tgctgtcgtc cgacggtgcg     60
gcgatcgagt tgcgcgaagg tgaggatgag gacctcgagc gggctgcggc caacctcggt    120
atcaacttgt cccgcaacga atcggcgtcc atagaagatc tggcttagcg aacttggcat    180
tatcgtcact aaacccgcaa ggggaaaggg agttacgtgc tagacgtcaa cttcttcgat    240
gaactccgca ttggcctggc taccgcggag gacattcgtc a                        281
```

<210> 121
<211> 277
<212> DNA
<213> Mycobacterium tuberculosis

<400> 121
```
ctgctcaaag aactgcagtc gctgtgcctc aacgtcgagg tgctatcgag tgacggtgcg     60
gcgatcgaac tgcgcgaagg tgaggacgag gacctggagc gggccgcggc caacctggga    120
```

```
atcaatctgt cccgcaacga atccgcaagt gtcgaggatc ttgcgtaaag ctgtcgcaaa    180
attactaaac ccgttagggg aaagggagtt acgtgctcga cgtcaacttc ttcgatgaac    240
tccgcatcgg tcttgctacc gcggaggaca tcaggca                            277
```

```
<210> 122
<211> 277
<212> DNA
<213> Mycobacterium tuberculosis
```

```
<400> 122
ctgctcaaag aactgcagtc gctgtgcctc aacgtcgagg tgctatcgag tgacggtgcg     60
gcgatcgaac tgcgcgaagg tgaggacgag gacctggagc gggccgcggc caacctggga    120
atcaatctgt cccgcaacga atccgcaagt gtcgaggatc ttgcgtaaag ctgtcgcaaa    180
attactaaac ccgttagggg aaagggagtt acgtgctcga cgtcaacttc ttcgatgaac    240
tccgcatcgg tcttgctacc gcggaggaca tcaggca                            277
```

```
<210> 123
<211> 192
<212> DNA
<213> Porphyromonas cangingivalis
```

```
<400> 123
ctcctacacg agctcaaagg tcttggtcta agcttctgta tggagtaata ggcgaggata     60
tgtgattata gttttttcct catcagaata aatctcccat tatatagtta tggcattcaa    120
aagagataca aagataaagg ccaacttcac ccgtattaag atcggtatcg cttctcccga    180
agaggtattg ga                                                       192
```

```
<210> 124
<211> 257
<212> DNA
<213> Mycoplasma genitalium
```

```
<400> 124
ttgacaaaag aattacaggg cttggcttta tctgtttcat ttatctatga tgacaacacc     60
caacaagact ccaataatgt ttccatcttg caaagtgatg gggaacaaga tgaatttttc    120
aatgattttg aatttgacac tgagggttat tagaaattaa caatgacaac aacaagacgt    180
aataaaagaa ataacaagct ttataaaaac attaaagcaa ttaaactttc catcgcttcc    240
aatgacacca ttttgaa                                                  257
```

```
<210> 125
<211> 245
<212> DNA
<213> Mycoplasma pneumoniae
```

```
<400> 125
ttaacgaagg aactacaagg gttagcgttg agtgtgtcct ttatttacga tgacaacacc     60
caacaagatt ccaacaacgt ttcaattctc caagctgatg gagaacagga cgatctcttt    120
aatgactttg aatttgacac ggagggttat taattaatga caaagcgtaa taaaaagaac    180
aacaagctgt acaagaacat taaggcaatt aagctttcga ttgcttccaa cgacacgatc    240
ctaaa                                                               245
```

```
<210> 126
<211> 305
<212> DNA
<213> Ureaplasma urealyticum
```

```
<400> 126
ttaacaaaac aaatgcaagg tttagggtta tgtattaccg ttgaaacaaa agatgatcgt     60
```

```
atggtagata ttaatgaata tacactaaat caaaatcgtt taaataatga cgatgatgag      120
gttattttag atgaaaatct aaaagagatc aatgattcta atgaagaaat atttaataca      180
aactttaata ataatgacta tgatgatgaa gagaacttct aaataataga aaggtaaaat      240
aatatgagtc aaaaagggat taaatcatta acgatttcca ttgcttcacc tgaacaaatt      300
ttaaa                                                                  305
```

```
<210> 127
<211> 244
<212> DNA
<213> Mycoplasma pulmonis
```

```
<400> 127
ttagcctatg aattaagagg gctaggaatc aaacttcaaa ttcatgaaaa agaagaagaa       60
aaacaagaac taccaagcca agaatatgaa agtttaaatc ttgatcaaga gctaaaaaca      120
gcttctgaaa atgttagtga aagtgagttt taattatgcc aaaaactaga aaatattcaa      180
cagttgatga agaaaagatt ttaaaagtta gcttatctct tgcaactaaa gaagatgttt      240
taga                                                                   244
```

```
<210> 128
<211> 202
<212> DNA
<213> Plasmodium falciparum
```

```
<400> 128
attttaaaag agttacaaag tttagctatt aaatatagaag cttttttgtat atttaatgat     60
acaaataatt tattagaaaa tttacctatt aatataattt attaataatg ataatacata      120
ataatataaa ttttataggga ttaaaattaa atatattaaa tcctaaacaa ataataaaat     180
ggtcttcaat attttataaa aa                                               202
```

```
<210> 129
<211> 136
<212> DNA
<213> Archaeoglobus fulgidus
```

```
<400> 129
cttctggatg agctgaagtc aatgatgatc gctccgagaa taattctcgg agataaggca       60
tgaggtgaaa tgagatggta ccgaagagga tttcagccat taaatttgag gttctctccc      120
cccaagagat aagaag                                                      136
```

```
<210> 130
<211> 169
<212> DNA
<213> Methanothermobacter thermoautotrophicus
```

```
<400> 130
ttacttctcg aactcaagag tctctgtatc ttcccgaaac tcatactgga agataaggca       60
tgataatgga tttaagggaa taacaaaaag gagagaatac cttgagagga attttaaaga      120
aaatttccca gataaacttt ggcctcatgt cccccgagga tatcaggaa                  169
```

```
<210> 131
<211> 136
<212> DNA
<213> Halobacterium sp
```

```
<400> 131
ctactcgacg agatgaaggc gctcggcatc gcgccgcgcc tggaactgga ggaggcagtg       60
taatgagtgc aggacaagcc cccaaggaaa tcggcgaaat cagcttcggg ctgatggacc      120
cagaggagta ccgcga                                                      136
```

<210> 132
<211> 127
<212> DNA
<213> Thermoplasma volcanium

<400> 132
atgagggatg agctgatatc tctcggtgtt gttatgcgtc ttatgttggg tgatatgaaa   60
tgatgggaat ttctaaaaga atttcaagta ttaaatttgc gcttctttct ccagacgaga   120
taagaaa   127

<210> 133
<211> 127
<212> DNA
<213> Thermoplasma acidophilum

<400> 133
atgagggatg agctgatctc tctcggtgtt gttatgaggt taatgctcgg tgatatgaaa   60
tgatgggaat atcaaaaaga atttcatcaa taaaatttgc ccttctttct ccggatgaga   120
taagaaa   127

<210> 134
<211> 141
<212> DNA
<213> Sulfolobus acidocaldarius

<400> 134
ttaattcaag aacttatgag tatggtaatt tcaccgagat taatttagg tgaaaaagta   60
aacttaggag gtgcttcaaa tgagtgagaa gattatacgg ggcgtaaaat ttggtgtatt   120
atcacctaat gaaataaggc a   141

<210> 135
<211> 145
<212> DNA
<213> Sulfolobus solfataricus

<400> 135
ttaattcaag aactaatgag tatgattatc tcacctaggt tagttttgga ggataaagtt   60
ggattaagtg gaggttaagg gaaatgagtg aaaagaatat aaaaggaata aagtttggaa   120
tactttctcc tgacgaaata agaaa   145

<210> 136
<211> 134
<212> DNA
<213> Pyrococcus abyssi

<400> 136
ctcttggatg agcttaaggc catggttatt aggccaaagt taaacctcac ggagagggtg   60
tgagctatgc aatccgttaa gaaggttatc ggtagtatag agtttggaat tctctcccct   120
caagaaatta gaaa   134

<210> 137
<211> 134
<212> DNA
<213> Pyrococcus horikoshii

<400> 137

```
cttctggatg agcttaaggc tatggtgatt agacctaagt taaacctcac ggagagggtg        60
tgagccatgc actcagttaa gaaggttata ggtagtattg aatttggaat actttcccct       120
caagaaatta ggaa                                                          134
```

```
<210> 138
<211> 224
<212> DNA
<213> Aeropyrum pernix
```

```
<400> 138
ctgctgcagg agataaccag tatgatgata aagccggaac tcaaggtagc cgacaagata        60
tccgtcatca gaaaagtcgt cggcgactat acatgattac cccattttaa ttctcggatt       120
tcgggggtgt tgggtgctat gtctctaagg ctctcggagt tccgcgagac aaaccttcta       180
gataagatac tctttggcgt cttaagcccc catgagataa ggca                        224
```

```
<210> 139
<211> 26
<212> DNA
<213> Artificial sequence
```

```
<220>
<223> Primer
```

```
<220>
<221> misc_feature
<222> (6)..(7)
<223> n = a, g, c or t/u
```

```
<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t/u
```

```
<220>
<221> misc_feature
<222> (12)
<223> n = a, g, c or t/u
```

```
<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t/u
```

```
<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t/u
```

```
<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t/u<400> 139
marccnntng gngaymgngt natngt                                              26
```

```
<210> 140
<211> 186
<212> DNA
<213> Pasteurella multocida
```

```
<400> 140
```

```
gaaaaaattg atggcgaaga agtgttaatt atttctgaaa acgatatttt agccattgtt      60
gaataatttt tatcaacaac acaaaatcgt tatttctata aataaacaaa cttaaaatag     120
caatttgcat aacaagattc gaaatgagag gaagataaaa aatggcagca aaagacgtaa     180
aatttg                                                               186
```

<210> 141
<211> 113
<212> DNA
<213> Haemophilus influenzae

<400> 141
```
gaaaaaatcg atggtgaaga agtgttaatc atttctgaaa acgacatcct agcaattgta      60
gaataattat taaataaggg aaaagaaaat ggcagcaaaa gacgtaaaat ttg            113
```

<210> 142
<211> 113
<212> DNA
<213> Haemophilus ducreyi

<400> 142
```
gaaaaaattg atggcgaaga aattttaatt ctttcagaga atgacattct tgcaattgta      60
gaataatcga agaataaggg ataataaaat ggcaataaaa gacgttaaat ttg            113
```

<210> 143
<211> 137
<212> DNA
<213> Buchnera aphidicola

<400> 143
```
gaaaaaattg ataacgaaga attattaatt ctaactgaaa gcgacatttt agcaattgtt      60
gaatagtaaa ccacatgcta tatcattgaa aattgattta aggggatgtc aaatggccgc     120
taaagatgta aaatttg                                                   137
```

<210> 144
<211> 139
<212> DNA
<213> Myzus persica

<400> 144
```
gaaaaaatta atactgaaga gttattactt ttaactgaaa gtgacatttt agcaattgtt      60
gaatagtaaa ctatatgcta tatccattta aaaatttatt taagggaatg tcaaatggcc     120
gctaaagatg taaaatttg                                                 139
```

<210> 145
<211> 144
<212> DNA
<213> Vibrio cholerae

<400> 145
```
gaaaagatcg atggcaaaga agtgctgatc ttggctgaac atgacatttt ggcaatcgtt      60
gaataattga ttctgaatcc caacgaaatc aataactgaa tttagaaagg aaatgaaaaa     120
tggctgctaa agacgtacgt tttg                                           144
```

<210> 146
<211> 137
<212> DNA

<213> Escherichia coli

<400> 146
gagaagatcg acaatgaaga agtgttgatc atgtccgaaa gcgacattct ggcaattgtt   60
gaagcgtaat cctcgcacga cactgaacat acgaatttaa ggaataaaga taatggcagc   120
taaagacgta aaattcg   137

<210> 147
<211> 137
<212> DNA
<213> Escherichia coli

<400> 147
gagaagatcg acaatgaaga agtgttgatc atgtccgaaa gcgacattct ggcaattgtt   60
gaagcgtaat cctcgcacga cactgaacat acgaatttaa ggaataaaga taatggcagc   120
taaagacgta aaattcg   137

<210> 148
<211> 137
<212> DNA
<213> Escherichia coli

<400> 148
gagaagatcg acaatgaaga agtgttgatc atgtccgaaa gcgacattct ggcaattgtt   60
gaagcgtaat ccgcgcacga cactgaacat acgaatttaa ggaataaaga taatggcagc   120
taaagacgta aaattcg   137

<210> 149
<211> 142
<212> DNA
<213> Pseudomonas putida

<400> 149
gtgaaagtcg atggcgaaga cctgctggta atggccgaga acgagattct cgccgttatc   60
gaaggctgat ttccccgact tcccgttatt ccaaagcatt tcaaggatta aacgatcatg   120
gctgctaaag acgtaaaatt cg   142

<210> 150
<211> 144
<212> DNA
<213> Pseudomonas aeruginosa

<400> 150
atcaaggtcg atggcgagga actgctggtg atgggcgagt ccgaaatcct cgccgtcctg   60
gaagactgat cggtctcacc actccgtttt caccgaattc gatttagagg aaagagaaca   120
tggctgccaa agaagttaag ttcg   144

<210> 151
<211> 186
<212> DNA
<213> Neisseria meningitidis

<400> 151
gtaaaagccg acggcgaaga gctgttggta atgcgcgaag aagatatttt cggcatcgtt   60
gaaaaataaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa   120
cggttttatc agacagtttt aatgattttt ggagaattga aatggcagca aaagacgtac   180
aattcg   186

<210> 152
<211> 186
<212> DNA
<213> Neisseria meningitidis

<400> 152
gtaaaagccg acggcgaaga gctgttggta atgcgcgaag aagatatttt cggcatcgtt   60
gaaaaataaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa   120
cggtttttatc agacagtttt aatgattttt ggagaattga aatggcagca aaagacgtac   180
agttcg   186

<210> 153
<211> 185
<212> DNA
<213> Neisseria gonorrhoeae

<400> 153
gtaaaagccg acggcgaaga gctgttggta atgcgcgaag aagatatttt cggcatcgtt   60
gaaaaataaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa   120
cggtttttatc agacagtttt aagatttttg gagaattgaa atggcagcaa aagacgtaca   180
attcg   185

<210> 154
<211> 201
<212> DNA
<213> Xylella fastidiosa

<400> 154
tacaaggctg aaggcgtcga atacaaagta ttacgcgagg acgacatcct ggcgatcatc   60
ggttgattaa gccaagcccg aaactcgtga atgcatccga catatcacgc caacagcggg   120
cacattgttc catacatcac taatgttctc atcgcgaatc ttggagtaaa aacataatgg   180
ctgccaaaga aattattttc a   201

<210> 155
<211> 224
<212> DNA
<213> Streptomyces coelicolor

<400> 155
gtgaagtaca acggcgagga gtacctcgtc ctctcggccc gcgacgtgct cgcgatcgtc   60
gagaagtaga agtagtactt cgcttcaccg aagcaccttg ctttccagct gcgcccctgg   120
ctcccgcgac cataaaaagc cgggcgtcgg gggcgcagtt gccgtataac cccaagattt   180
ccggaagagg gctcacgctc ccatggcgaa gatcctgaag ttcg   224

<210> 156
<211> 185
<212> DNA
<213> Mycobacterium tuberculosis

<400> 156
atcaagtaca acggcgagga atacctgatc ctgtcggcac gcgacgtgct ggccgtcgtt   60
tccaagtagt agagcgtgtt ccgccccggc gatccccgtg ctcaccacgg gtgatttccg   120
gggcggcatg cgttagcgga ctagccctgc gtagaggagc ctgatgagca agctgatcga   180
atacg   185

<210> 157
<211> 185
<212> DNA
<213> Mycobacterium tuberculosis

<400> 157
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atcaagtaca acggcgagga atacctgatc ctgtcggcac gcgacgtgct ggccgtcgtt    60
tccaagtagt agagcgtgtt ccgccccggc gatccccgtg ctcaccacgg gtgatttccg   120
gggcggcatg cgttagcgga ctagccctgc gtagaggagc ctgatgagca agctgatcga   180
atacg                                                              185
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<210> 158
<211> 169
<212> DNA
<213> Mycobacterium leprae

<400> 158
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atcaagtaca atggcgagga atacctgatc ctgtcggcac gtgacgtgct ggctgtcgta    60
tccaagtaac gaaccgtgtt ccgccccggc gatccccgtg cttaaccacg ggtgatttcc   120
ggggcggcat gcgtttaaag gagcctgatg agcaagctga ttgagtacg               169
```

<210> 159
<211> 103
<212> DNA
<213> Thermus aquaticus

<400> 159
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attgagattg caccgcgaag gacgtacgtg atcctctccg agcgcgacct gcttgcggtc    60
ctgcagtaaa ggaggtgaac catggcgaag atcctggtgt ttg                    103
```

<210> 160
<211> 100
<212> DNA
<213> Thermus thermophilus

<400> 160
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attgagattg acggcgagga gtacgtgatc ctctccgagc gcgacctgct tgcggtcctg    60
cagtaaagga ggtgaaccat ggcgaagatc ctggtgtttg                        100
```

<210> 161
<211> 100
<212> DNA
<213> Thermus thermophilus

<400> 161
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attgagattg acggcgagga gtacgtgatc ctctccgagc gcgacctgct tgcggtcctg    60
cagtaaagga ggtgaactat ggcgaagatc ctggtgtttg                        100
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<210> 162
<211> 162
<212> DNA
<213> Deinococcus radiodurans

<400> 162
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gtcagcctcg aaggcaagaa ctacagcctg ctgagcgagc gcgacctgct cgccattgtc    60
gagtaaggct ccgagtcagg ttctgagcct gttcgtttcc tgtttttctt cctcatttca   120
cttttcaagg agcaatcaca atggctaaac agctcgtgtt tg                     162
```

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<210> 163
<211> 121
<212> DNA
<213> Porphyromonas gingivalis

<400> 163
atagagctgg agggcgaaaa atatatcatc atgcgccaaa acgatgtctt ggcaatcatc      60
taattctcag agacaataac ctacaataaa aaataaagac tatggcaaaa gaaatcaaat     120
t                                                                     121


<210> 164
<211> 134
<212> DNA
<213> Bacillus subtilis

<400> 164
gtgaaatacg aaggtactga atacttaatc ttacgtgaaa gcgacatttt agctgttatc      60
ggctaattct taaataaaca atacttaaaa catttgagga ggtcttgtaa acatggcaaa     120
agaaattaag ttta                                                       134


<210> 165
<211> 180
<212> DNA
<213> Bacillus halodurans

<400> 165
gtaaaatatg atggtaaaga gtatttaatc cttcgtgaaa gcgatattct cgcgattatc      60
ggttaatttt acgtagggtt atccctacat acatgtaaga cgagaggttt ttgtctattc     120
ctcttttgta aaataccatt caggaggttg agaataacat ggcaaaagat attaagttta     180


<210> 166
<211> 121
<212> DNA
<213> Lactobacillus zeae

<400> 166
gtgaagtatg aaggtcaaga ctaccttgta ttgcatgaaa aagacatcat ggcaattgcg      60
taactaaata atcgatcaat tttgaggtga ataaaaacaa tggcaaaaga aattaaattc     120
t                                                                     121


<210> 167
<211> 142
<212> DNA
<213> Clostridium perfringens

<400> 167
gttaagttcg aggggaaga atatactatt ttaagacaag acgatatact agcaatagtt      60
gaatagtttt aaaatataag tgatttagat attcataata tatttgggag gtaaattaat     120
atggctaaaa cattattatt cg                                              142


<210> 168
<211> 120
<212> DNA
<213> Clostridium difficile

<400> 168
gttaagatag aaggacaaga atacacaata ctaagacaga gtgatgtatt agctgttatt      60
gaataaatat agaataaatt tattaggagg ggtttaaaat ggctaaagaa attaaatttt     120
```

<210> 169
<211> 129
<212> DNA
<213> Clostridium acetobutylicum

<400> 169
ataaaagttg acaatgaaga attgttaatt ttaagacagg acgatatttt aggaattgta   60
gaagaataag ctatcaattt tgttaataat tcagggaggg attctaaatg gcaaagcaaa   120
tattatacg   129

<210> 170
<211> 141
<212> DNA
<213> Lactobacillus helveticus

<400> 170
gttgaatacg aaggtgaaaa gtacttagtc cttcatgaaa aagacatttt agcaattgca   60
aaataattga cgcaattatt agaaattaaa atacgagatt aaggaggcat agataatcta   120
tggcaaaaga tattaaattc t   141

<210> 171
<211> 118
<212> DNA
<213> Lactobacillus johnsonii

<400> 171
ttgaagtacg aaggcgaaaa gtacttagtt cttcgtgaaa gcgacttatt agctgtcgtt   60
aagtaataaa atttgaaata aaaggtggca tataatatgg ctaaagagat taaatttt   118

<210> 172
<211> 143
<212> DNA
<213> Staphylococcus epidermis

<400> 172
gtaaaacgtg gcgcccaaac atatttaatt ttaaatgaag aagatatatt agctattata   60
gaataaagag cgaattttaa atattaatta aatgatttaa taagtggagg ttgtttagac   120
tatggcaaaa gatcttaaat tct   143

<210> 173
<211> 163
<212> DNA
<213> Staphylococcus aureus

<400> 173
gttaaacgag ataatgaaac atatctagta ttaaatgaag aagatatttt agcggtaatt   60
gaataatata aaattaaatt catagataaa ttgtaaagaa cgaaaatgaa atatgactaa   120
acaaatggag gtttatcatt tatggttaaa caattgaaat tct   163

<210> 174
<211> 106
<212> DNA
<213> Streptococcus pneumoniae

<400> 174
gtcaaagatg gcgatgaaaa gtacatcatc gtaggcgaag ctaacatttt ggcaatcatt   60
gaggaataga aggagaaagt aagtatgtca aaagaaatta aatttt   106

<210> 175
<211> 175
<212> DNA
<213> Lactococcus lactis

<400> 175
gtaaaaatgg atggtgaaga attcttgatt ctcaaagatt cagaccttct tgcaattgta   60
gagtaaaatt ataaaagcaa tcattttttt ggttgtcttt tgtctatctt aaaatctata   120
aaattaaaaa tatattctta aaaaggagct aaaatgtcaa aagatattaa atttt   175

<210> 176
<211> 111
<212> DNA
<213> Rickettsia prowasekii

<400> 176
attgaaataa aaggagaaaa attaatcgtt atgaaagaaa gcgatgtatt tggtattatt   60
aattaattat ttttaggaga aaaaatatga caacgaaact tattaaacac g   111

<210> 177
<211> 129
<212> DNA
<213> Chlamydia muridarum

<400> 177
ctcactgtcg aaggtgaaga atatgtcatc gttcaaatga gcgaagttat agcagtcctg   60
caataaaaac taagagagtg aagtaagatt taaggagcgc atcgatggtc gctaaaaata   120
ttaaatata   129

<210> 178
<211> 128
<212> DNA
<213> Chlamydia trachomatis

<400> 178
cttactgtcg aaggtgaaga gtacgtcatc gttcaaatga gcgaagttat cgcagttctg   60
caataaaaac taagagagtg aagaagattt aaggagcgca tcaatggtcg ctaaaaacat   120
taaataca   128

<210> 179
<211> 132
<212> DNA
<213> Chlamydophila pneumoniae

<400> 179
atcacaatcg atgacgaaga gtatgtcatt ctacagtcca gtgaaatcat ggccgtccta   60
aaataaaata ctagtttgca gattatagaa agttaaggag aacaacgatg gcagcgaaaa   120
atattaaata ta   132

<210> 180
<211> 132
<212> DNA
<213> Chlamydophila pneumoniae

<400> 180
atcacaatcg atgacgaaga gtatgtcatt ctacagtcca gtgaaatcat ggccgtccta   60
aaataaaata ctagtttgca gattatagaa agttaaggag aacaacgatg gcagcgaaaa   120

atattaaata ta   132

<210> 181
<211> 132
<212> DNA
<213> Chlamydophila pneumoniae

<400> 181
atcacaatcg atgacgaaga gtatgtcatt ctacagtcca gtgaaatcat ggccgtccta   60
aaataaaata ctagtttgca gattatagaa agttaaggag aacaacgatg gcagcgaaaa   120
atattaaata ta   132

<210> 182
<211> 141
<212> DNA
<213> Chlamydophila caviae

<400> 182
cttaccgttg atggtgagga gtacgtcatt gttcaggaaa gcgaagttat ggcagttctc   60
aagtaagaga aatcattatt tatagattgc aaaaagttaa ggagcacaaa aaaacaatgg   120
cagcaaaaaa tattaaatat a   141

<210> 183
<211> 160
<212> DNA
<213> Helicobacter pylori

<400> 183
ctagaagaca ttctaggcat tgtgggctca ggctcttgtt gtcatacagg taatcatgac   60
cataaacatg ctaaagagca tgaagcttgc tgtcatgatc acaaaaaaca ctaaaaacat   120
tattattaag gatacaaaat ggcaaaagaa atcaaatttt   160

<210> 184
<211> 160
<212> DNA
<213> Helicobacter pylori

<400> 184
ctagaagaca ttctaggtat tgtgggctca ggctcttgct gtcatacagg taatcatgac   60
cataaacatg ctaaagagca tgaagcttgc tgtcatgatc acaaaaaaca ctaaaaacat   120
tattattaag gatacaaaat ggcaaaagaa atcaaatttt   160

<210> 185
<211> 72
<212> DNA
<213> Campylobacter jejuni

<400> 185
ttagatgata tcttaggaat tttaaaataa tttataaaaa aggataaaaa atggcaaaag   60
aaattatttt tt   72

<210> 186
<211> 136
<212> DNA
<213> Clostridium thermocellum

<400> 186
gtaaaatttg acggacagga atatacgatc ttaagacaaa acgatatttt ggcggtagta   60
gagtaattat attaccaact tcaatacaaa aagtatccta aggaggttaa tcatatggca   120

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aagcaaataa aatttg                                                      136


<210> 187
<211> 127
<212> DNA
<213> Mycoplasma genitalium

<400> 187
tttgagaatg agggaaacaa gtacaaaatt attggatttg aggatgtact tgcctttgaa      60
aaaccagaaa gtggtaagca aagaaaaaga taaaattaaa caattatggc aaaggaatta     120
atctttg                                                               127


<210> 188
<211> 138
<212> DNA
<213> Mycoplasma pneumoniae

<400> 188
tttgaagagg aaggtaccaa gtacaagatt atttccttgg aagatgtcct tgctttttgaa     60
aagcatggta atacaaaaac tactactgta aagaaaggag ctaagaaaaa atagttatgg     120
caaaggaatt agtatttg                                                   138


<210> 189
<211> 120
<212> DNA
<213> Aquifex aeolicus

<400> 189
gtagagattg aaggaaagat ttacctcgtt atgtctgaag acgaagtttt agctgttgtt      60
gaagattatt caagcttaat aggaggtgag gtgagatggc agcaaaggca attatctaca     120
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